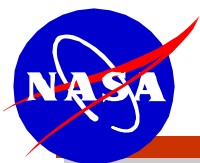


Space Shuttle Process Control Program

***Space Shuttle Program
Technical Program Manager's Review
September 6-7, 2001***

**Joyce Rozewski
Process Control Focus Group**



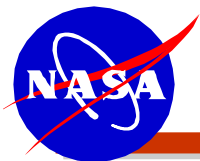


SSP Process Control Program

- Ongoing Awareness/Supplier Education Program
- Active Promotion and Implementation of Process Control Best Practices
- Performance Tracking



Motivating Culture Change – Focus on Antecedents and Consequences



Supplier Awareness



Videos

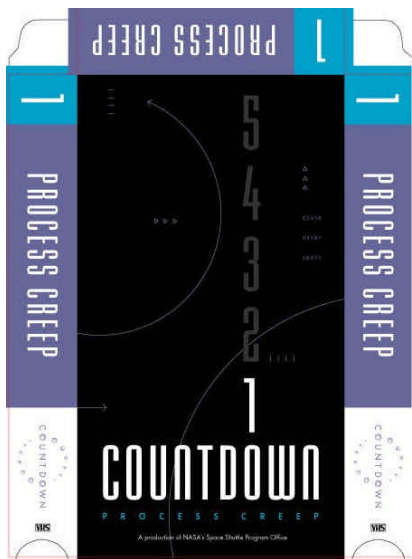
“Success in Process Control” –

Widespread Distribution – To All Major Suppliers This Year

Showed How Minor Process Escapes Can Have Major Effect

Well Received – Positive Feedback

➤ Telly Award Winner!

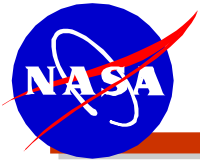


“Countdown: Process Creep” –

Just released for this year's promotion

Promotes Attention to How Process Creep Can Cause Escapes





Supplier Awareness

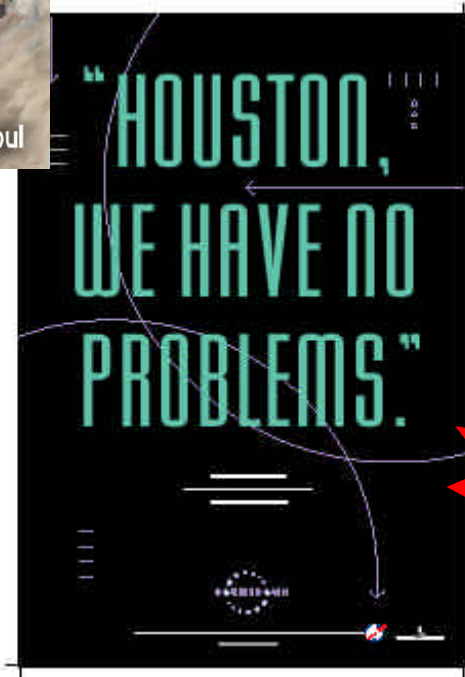


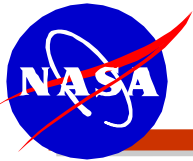
Posters

11,000 Posters printed in support of the two videos

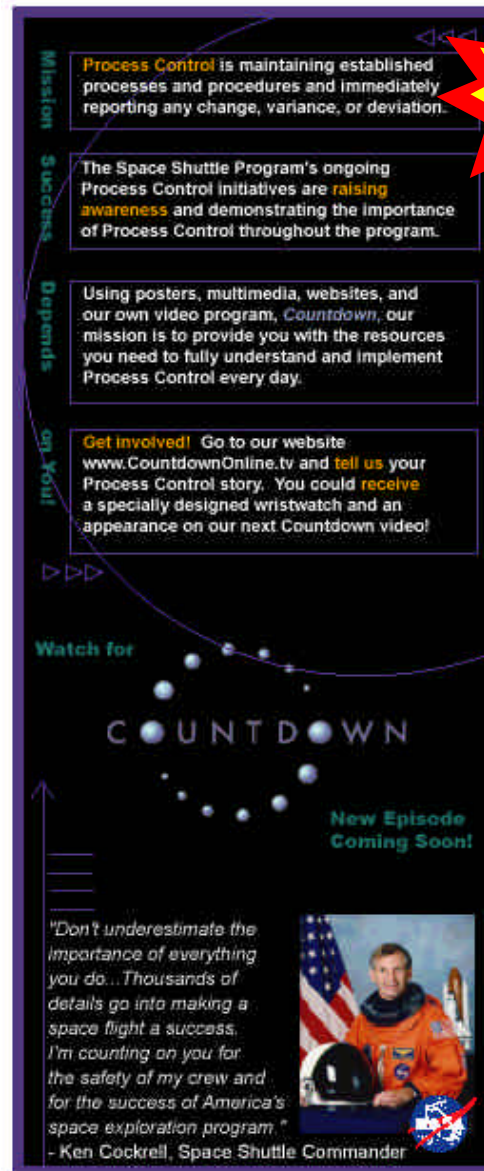
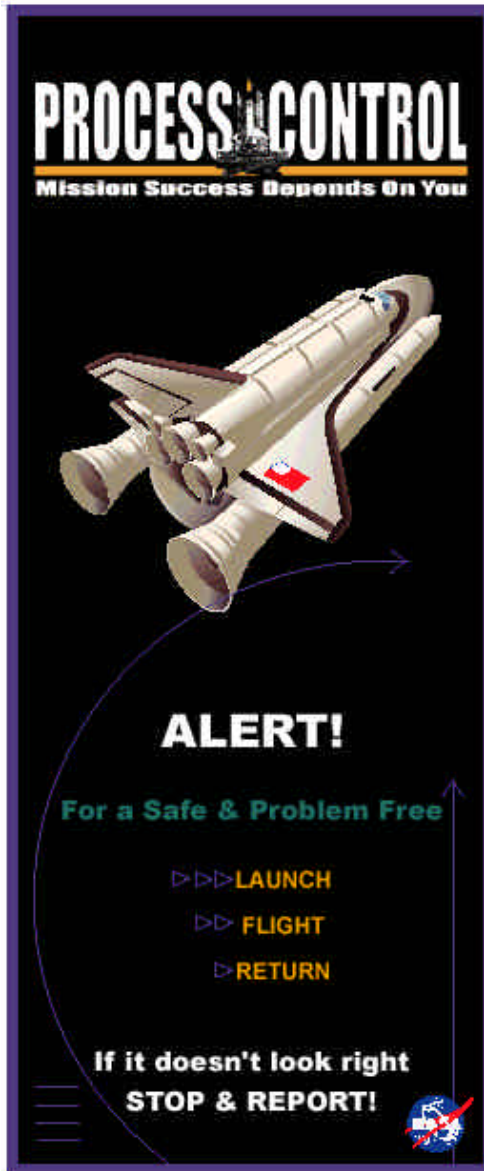
Distribution to all major suppliers with videos

Follow on posters in design phase





Supplier Awareness



Brochures

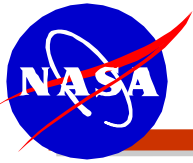
Bookmark style

Explains Process Control Program to Individual Employees

Product Fact Sheets

Supplier-targeted

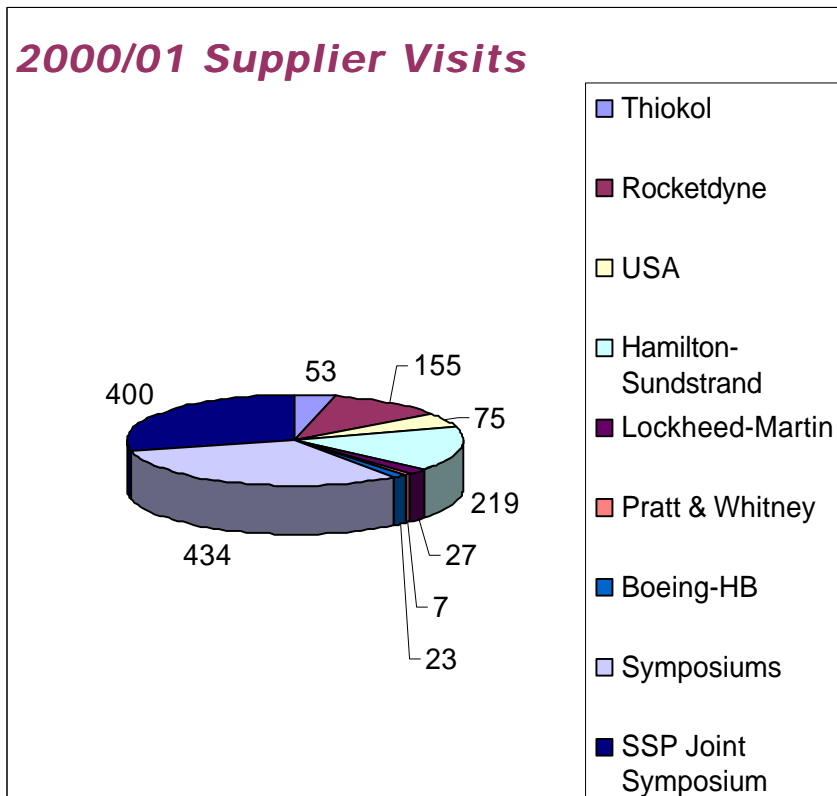
Shows Exactly Where Product is Used on Shuttle



Supplier Awareness



Supplier Visits and Symposiums



1393 Suppliers Visited with Process Control Message

Over 10,000 People have heard the Process Control message!

✓ **Coordinating Joint Visits**

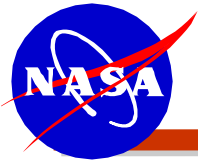
- OEMs
- Processors
- Distributors

✓ **Supplier Conferences Combined**

- United Space Alliance
- Hamilton Sundstrand
- HSF&E
- Rocketdyne
- Thiokol

✓ **Professional Organizations**

- American Society for Quality
- Conference of Quality in Space & Defense
- Aerospace Industries Association



Supplier Awareness



CD-ROM



**Mini Disc for Delivering Process Control
Message at Individual Level**

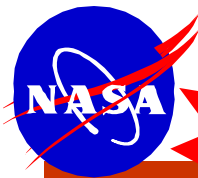
**Fun and Engaging, Reinforces Familiar
Themes**

WEBSITES



**Process Control Focus Group website
(coming soon)**

www.countdownonline.tv



NEW!

Best Practices Implemented

Boeing-Rocketdyne

Stamp Warranty
Contractual Flowdown to
Suppliers
Supplier Baselines (P&W)
**Supplier Signature
Requirements (Thiokol)**
Build-to-Package Training
for other Primes

Boeing – Huntington Beach

Process Control Hands-On
“Road Show”
Palm Pilot Quality
Performance Application
Expansion

Thiokol

Stamp Warranty Program
**Supplier Product
Brochures (Rocketdyne)**
**Integrated Product and
Process Development
(IPPD) (Rocketdyne)**

Lockheed Martin

Product Process Flow
Charts
No Change Policy System
Weld/Braze Material Control
Subtier Purchase Order
Review
Supplier Technical
Interchange

Hamilton Sundstrand

**Personal Warranty
Program(Rocketdyne)**
Supplier Manufacturing
Readiness Reviews
Manufacturing and Test
Readiness Reviews
FOD Training Program (In-
house & Suppliers)
Product Protection
Analysis
Online Training
Management System
HSSSI Lessons Learned
Database

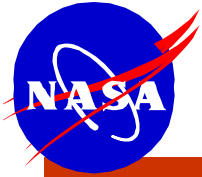
USA

PPIA's at Suppliers
Supplier Process Audits
**Personal Warranty
Program(Rocketdyne)**
Process Teams
PFMEA's on critical tasks
(Thiokol)
Root Cause Analysis
Program

Pratt & Whitney

**Build-to-packages
(Rocketdyne)**
Critical Process Training
videos

**Open, Active Sharing and Communication
Leads to Program Improvement**



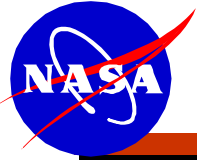
Continuing Efforts



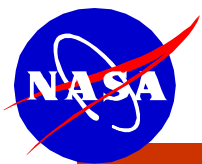
- Shuttle Supplier Conference Sept 26-27, 2001 at KSC – Heavy Process Control Message – Next Logical Step (Challenge to Suppliers to Make Change)
- In-depth Nonconformance Trending analysis – standardization of cause codes
- Process Control requirements flow down to suppliers
- Best Practices Handbook for Suppliers – How to Implement
- Next Year's Video – “Knowledge Transfer”
- Lessons Learned Database and Knowledge Transfer
- Motivating Culture Change at Suppliers – Changing the Consequences
 - Process Control Audits
 - Business Case presentations



Motivating Culture Change



Backup



Process Control Initiative

Team & Mission Statement

NASA:

Johnson Space Center (Lead)
Kennedy Space Center
Marshall Space Flight Center
Stennis

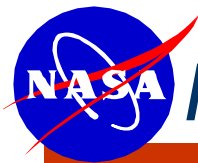
Contractors:

United Space Alliance 
Lockheed Martin Michoud (ET)
Rocketdyne Propulsion (SSME)
Hamilton Sundstrand (EMU)
Pratt & Whitney (Turbo Pump)
Thiokol (RSRM)
Boeing-Huntington Beach
(Orbiter)

Ground Operations
Flight Operations
Integrated Logistics
Solid Rocket Boosters
Flight Crew Equipment
Program Integration
Flight Software
Orbiter (Boeing)



“Reduce Space Shuttle Program Risk by Preventing Process Escapes”



PCFG Team Members



John J. DeGiovanni

Neil Bussiere

Boeing-Rocketdyne

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Ken Bornstedt

Lockheed Martin

Keith Foulger

Thiokol Propulsion

Mike Gemme

Lionel Ribeiro

Hamilton-Sundstrand

Dan Specksgoor

Dan Dannecker

Pratt & Whitney

Tammi Belt

Lil Johnson

United Space Alliance

Mike Rizzi

Boeing-Huntington Beach

Joyce Rozewski

Space Shuttle Program

Terry Keeney

NASA KSC

Rick Williams

NASA MSFC

Mike Smiles

NASA Stennis

Tom Malatesta

NASA JSC